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Gary W. Kamerman

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EXAMINER

GEISEL, KARA E

ART UNIT

PAPER NUMBER

2877

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/690,334

**Applicant(s)**

KAMERMAN, GARY W.

**Examiner**

KARA E. GEISEL

**Art Unit**

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3-18, 20-26, 28-48, 52, 58 and 59 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-17, 21-26, 28-33, 35-41, 43, 46-48, 52, 58 and 59 is/are allowed.
- 6) ☒ Claim(s) 1, 3, 18, 20, 34, 42, 44 and 45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-848)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments, see the amendment, filed November 19<sup>th</sup>, 2007 (pages 14-18), with respect to the rejection(s) of claim(s) 1, 3, 18, 20, 34, 42, and 44-45, based on Lindberg et al. (USPN 5,748,308) have been fully considered and are persuasive in that Lindberg is silent to the intensity of the filtered signal being greater if the at least one substance is present in the specimen. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Brooks et al. (USPN 5,815,261).

It is noted, with respect to the arguments that the references do not teach optically multiplying the first spectra with the second known spectra, that this is not persuasive. An inherent quality to a correlation filter, also known as a matched filter, is that the filter optically multiplies the signal received at the filter with the spectra it is representing (see for example, US 5,815,261 and US 5,987,188). Therefore, any reference with a filter that represents a reference spectra (i.e. a correlation or matched filter), would read on this limitation.

Applicant's arguments, see the amendment, filed November 19<sup>th</sup>, 2007 (page 19), with respect to the rejection of claim 52 based Lindberg et al. (USPN 5,748,308) have been fully considered and are persuasive in that Lindberg is silent to storing a threshold, and comparing the threshold with a measured value to provide an indication as to whether at least one substance is present in the specimen based on the comparison. The rejection of claim 52 has been withdrawn.

### ***Claim Objections***

Claim 20 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

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Claim 20, as amended, is a dependent claim, but depends on itself. For the purposes of applying art, claim 20 will be construed to depend on claim 18.

***Claim Rejections - 35 USC § 112***

Claims 1, 2, 18, 20, 34, 42, and 45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regards to claim 1, line 12, “wherein an intensity of the filtered optical signal is greater”; it is not clear from the claim what the intensity is greater than (i.e. is the intensity greater than the intensity of the light collected from the specimen, or is it greater than if the at least one substance is not present in the specimen). For the purposes of applying art, the limitation will be construed as the intensity is greater than if the at least one substance is not present in the specimen.

In regards to claim 18, lines 12-13, “wherein an intensity of the filtered spectra is greater”; it is not clear from the claim what the intensity is greater than (i.e. is the intensity greater than the intensity of the light collected from the specimen, or is it greater than if the at least one substance is not present in the specimen). For the purposes of applying art, the limitation will be construed as the intensity is greater than if the at least one substance is not present in the specimen.

In regards to claim 34, lines 11-13, “wherein the optical filter is configured to optically multiply the dispersed spectra with the second known spectra such that the intensity is greater”; it is not clear from the claim what the intensity is greater than (i.e. is the intensity greater than the intensity of the light received from the specimen, or is it greater than if the at least one substance is not present in the specimen). For the purposes of applying art, the limitation will be construed as the intensity is greater than if the at least one substance is not present in the specimen.

In regards to claim 42, lines 10-11, “the optical signal has an intensity that is greater”; it is not clear from the claim what the intensity is greater than (i.e. is the intensity greater than the intensity of the

light received from the specimen, or is it greater than if the at least one substance is not present in the specimen). For the purposes of applying art, the limitation will be construed as the intensity is greater than if the at least one substance is not present in the specimen.

In regards to claim 45, line 8, “such that the filtered spectra has a greater intensity”; it is not clear from the claim what the intensity is greater than (i.e. is the intensity greater than the intensity of the light received from the specimen, or is it greater than if the at least one substance is not present in the specimen). For the purposes of applying art, the limitation will be construed as the intensity is greater than if the at least one substance is not present in the specimen.

Claims, which are dependent from claims 1, 18, 34, 42, and 45 inherit the problems of these claims, and are therefore also rejected under 35 U.S.C. 112, second paragraph.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 34, 42, and 44-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Brooks et al. (USPN 5,815,261), newly cited.

In regards to claim 1, Brooks discloses a spectral correlator (fig. 1) comprising a specimen (column 2, lines 35-49; although the specimen is not shown, the invention is directed towards identifying compounds in a substance, and therefore, the light coming through 18 would be from a specimen), and an optical device (12) configured to collect light from the specimen, the optical device having a wavelength spreading element configured to disperse, based on wavelength a received first spectra of the light collected from the specimen (22), the optical device configured to optically determine a similarity of the

dispersed first spectra of the light collected from the specimen and a second known spectra of at least one substance by directly comparing the light to a representation of the second known spectra (via 14; column 4, lines 16-24), wherein the optical device has a spatial filter (14) indicative of the representation of the second known spectra (column 4, lines 16-24), the filter configured to filter the received first spectra such that the received first spectra is optically multiplied with the second known spectra thereby transmitting from the filter a filtered optical signal indicative of the similarity (inherent of 14, as discussed above), wherein an intensity of the filtered optical signal is greater if the at least one substance is present in the specimen (fig. 3; column 4, lines 45-66).

In regards to claim 3, the correlator further comprises a detection device (40) configured to sense the filtered optical signal and determine, based upon the filtered optical signal, whether the at least one substance, is present in the specimen (column 4, lines 39-66).

In regards to claim 34, Brooks discloses a spectral correlator (fig. 1) comprising a specimen (column 2, lines 35-49; although the specimen is not shown, the invention is directed towards identifying compounds in a substance, and therefore, the light coming through 18 would be from a specimen), means for receiving light reflected off and/or emitted by the specimen (18 and column 2, lines 37-38), means for separating the light into its component colors thereby providing a dispersed spectra (22), and means for optically correlating the dispersed spectra to determine a similarity of the dispersed spectra and a second known spectra of at least one substance (14, and column 4, lines 16-24), the correlating means having an optical filter for filtering the dispersed spectra (14), the optical filter indicative of the second known spectra such that the filtered light from the filter has an intensity indicative of the degree to which the dispersed spectra and the second known spectra are similar (fig. 3, column 4, lines 45-66), wherein the optical filter is configured to optically multiply the dispersed spectra with the second known spectra (inherent of 14, as discussed above) such that the intensity is greater if the at least one substance is present in the specimen (fig. 3; column 4, lines 45-66).

In regards to claim 42, Brooks discloses a spectral correlation method (using fig. 1) comprising receiving light from a specimen (via 18), separating a first spectra of the light into its component colors thereby providing a separated first spectra (via 22), filtering the separated first spectra with a spatial filter indicative of a representation of a known second spectra of at least one substance (using 14) to provide an optical signal indicative of the degree to which the first spectra and the known second spectra are similar (column 4, lines 45-66), the filtering step comprising the step of optically multiplying the separated first spectra with the known second spectra (inherent of 14, as discussed above) such that the optical signal has an intensity that is greater if the at least one substance is present in the specimen (column 4, lines 45-66); transmitting the optical signal from the filter (via 38), and detecting the optical signal (via 40).

In regards to claim 44, the method further comprises providing an indication as to whether at least one substance is present in the specimen based on the optical signal (column 2, lines 45-49).

In regards to claim 45, Brooks discloses a spectral correlation method (using fig. 1) comprising receiving light from a specimen (via 18), separating the light into its component colors thereby providing a dispersed spectra (via 22), filtering the dispersed spectra with a spatial filter indicative of a known spectra corresponding to at least one substance to provide a filtered spectra (via 14), the filtering step comprising the step of optically multiplying the dispersed spectra with the known spectra (inherent of 14, as discussed above), such that the filtered spectra has a greater intensity if the at least one substance is present in the specimen (column 4, lines 45-66), determining whether the at least one substance is present in the specimen based on the filtered spectra (via 40) and providing an indication as to whether the at least one substance is present in the specimen based on the determining step (column 2, lines 45-49).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al. (USPN 5,815,261), newly cited.

In regards to claim 18, Brooks discloses a spectral correlator (fig. 1) comprising a specimen (column 2, lines 35-49; although the specimen is not shown, the invention is directed towards identifying compounds in a substance, and therefore, the light coming through 18 would be from a specimen), and an optical device (12) having a wavelength spreading element (22) and a spatial filter indicative of a known spectra of at least one substance (14 and column 4, lines 16-31), the wavelength spreading element configured to disperse a spectra defined by light from the specimen (column 3, lines 48-50), the filter configured to filter the dispersed spectra such that the dispersed spectra is optically multiplied with the known spectra thereby transmitting from the filter a filtered spectra indicative of a degree of similarity between the dispersed spectra and the known spectra (inherent of 14, as discussed above), wherein an intensity of the filtered spectra is greater if the at least one substance is present in the specimen (column 4, lines 45-66). Brooks is silent to the correlator having an illuminating device configured to illuminate the specimen. However, Brook's invention is mainly directed to the detection part of a correlation spectrometer, which receives emitted light from the sample (column 2, lines 34-40). It is furthermore disclosed that the sample is "caused to emit light" (column 2, line 38). The examiner takes official notice, that it is well known in the art to use an illuminating device, such as a laser, to cause a sample to emit light. Therefore, it would have been obvious to one of ordinary skill at the time the invention was made to include in Brooks correlator, an illuminating device configured to illuminate the specimen in order to cause the specimen to emit light so that the spectral correlator can analyze the emitted light.

In regards to claim 20, the correlator further comprises a detection device (40) configured to sense the filtered spectra and determine, based upon the filtered spectra, whether the at least one substance, represented is present in the specimen (column 4, lines 39-66).



***Allowable Subject Matter***

Claims 4-17, 21-26, 28-33, 35-41, 43, 46-48 and 58-59 are allowed over the prior art of record for the reasons set forth in the previous Office Actions (paper numbers 20060808 and 20070511).

Claim 52 is allowed over the prior art of record.

The following is a statement of reasons for the indication of allowable subject matter:

As to claim 52, the prior art of record, taken alone or in combination, fails to disclose or render obvious a spectral correlator wherein the optical device is configured to store a threshold and to measure an intensity of the optical signal thereby providing a measured value, the optical device further configured to perform a comparison between the measured value and the threshold and to provide an indication as to whether at least one substance is present in the specimen based on the comparison, in combination with the rest of the limitations of claim 52.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kara E Geisel whose telephone number is **571 272 2416**. The examiner can normally be reached on Monday through Friday, 8am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on **571 272 2800 ext. 77**. The fax phone number for the organization where this application or proceeding is assigned is **571 273 8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Kara E Geisel/  
Primary Examiner, Art Unit 2877

February 15, 2008